

BROADBAND / CATV / SATELLITE

HFC & Coaxial Connectivity

Product guide

RF distribution, signal-level control and cable termination for broadband and satellite installations. Select the component around the frequency plan, port layout and power-pass requirements.



Broadband distribution



Fixed attenuation



RG6 compression connections

Inside this guide

- 02** Broadband model selection
- 3-5** Splitter and directional-coupler specifications
- 06** Satellite distribution splitters
- 07** Attenuators and connectors
- 08** Applications and repeat supply

For operators, deployment partners and OEM supply programs.

Go deeper by product family

For outdoor and indoor 1218 MHz families, compact MoCA, 1800 MHz, 2500 MHz and wideband RF tables, open the HFC & Coaxial Technical Catalog.

Practical product support. Personal service.

sales@componexx.com | componexx.com

01 / BROADBAND RF DISTRIBUTION

Splitters and directional couplers

Select the output count or tap value around the network layout. The broadband range summarized here is specified for 5–1000 MHz.

Broadband splitters

Horizontal and vertical configurations support different port arrangements and installation layouts. Preserve the exact model and port orientation when specifying a replacement or recurring supply item.

Model family	Outputs	Configuration
CX-SP-2WH / CX-SP-2WV	2	Horizontal / vertical
CX-SP-3WH / CX-SP-3WV	3	Unequal-output arrangement
CX-SP-3WBH / CX-SP-3WBV	3	Balanced-output arrangement
CX-SP-4WH / CX-SP-4WV	4	Horizontal / vertical
CX-SP-6WV / CX-SP-8WV	6 / 8	Vertical

The detailed 1 GHz model codes carry the -1G suffix. Confirm the complete code and housing orientation for the quoted configuration.

Directional couplers

Select a defined tap level while retaining a through path. These are a separate selection from equal-output splitters.

Model	Nominal tap value	Frequency range
CX-DC-1W-6dB	6 dB	5–1000 MHz
CX-DC-1W-9dB	9 dB	5–1000 MHz
CX-DC-1W-12dB	12 dB	5–1000 MHz
CX-DC-1W-16dB	16 dB	5–1000 MHz

Select to the actual operating bands

Nominal impedance is 75 Ω . Review insertion loss, return loss and isolation by port and frequency band, plus the upstream/downstream plan and installation environment. Request the model-specific limits and the evaluation requirements for your network.

The 1 GHz data shown here does not establish 1.2 GHz performance or qualification for every DOCSIS deployment. Wider-band programs require their own agreed specification.

BROADBAND / HORIZONTAL HOUSINGS

Horizontal splitter specifications

5–1000 MHz · 75 Ω · maximum insertion loss from the model-specific QC limits.

Short label below	Complete orderable model
2WH	CX-SP-2WH-1G — 2-way
3WH	CX-SP-3WH-1G — unequal 3-way
3WBH	CX-SP-3WBH-1G — balanced 3-way
4WH	CX-SP-4WH-1G — 4-way

Insertion loss, maximum dB

MHz	2WH	3WH	3WBH	4WH
5–15	3.4	3.5 / 7.0	5.4	6.9
15–42	3.4	3.5 / 7.0	5.5	7.0
50–550	3.5	3.4 / 7.2	5.8	6.9
550–870	3.8	3.9 / 7.6	6.2	7.6
870–1000	4.0	3.9 / 7.8	6.7	7.9

For 3WH, paired values distinguish the lower-loss and higher-loss outputs. Follow the product port markings when assigning the branches.

Minimum limits across the listed bands

Model	Input RL	Output RL	Isolation
2WH	21 dB	21 dB	22 dB
3WH	21 dB	21 dB	27 dB
3WBH	20 dB	21 dB	23 dB
4WH	20 dB	20 dB	24 dB

RL = return loss. Summary values are the lowest model-specific QC minimum across the five listed bands. Band-by-band limits remain the acceptance reference.

Use the frequency plan

Choose the required output arrangement first, then include splitter loss and cable loss for each branch. Performance is not interpolated for the 42–50 MHz gap in the source table or extrapolated beyond 1000 MHz.

Practical product support. Personal service.

sales@componexx.com | componexx.com

Overview

HFC & COAXIAL / PAGE 3

BROADBAND / VERTICAL HOUSINGS

Vertical splitter specifications

Choose the port count and housing orientation to suit the enclosure and cable routing.

Short label below	Complete orderable model
2WV / 3WBV	CX-SP-2WV-1G / CX-SP-3WBV-1G
4WV / 6WV / 8WV	CX-SP-4WV-1G / CX-SP-6WV-1G / CX-SP-8WV-1G

Insertion loss, maximum dB

MHz	2WV	3WBV	4WV	6WV	8WV
5–15	3.5	6.0	7.0	9.2	11.0
15–42	3.5	5.8	7.2	9.2	11.0
50–550	3.8	6.0	7.6	9.6	11.2
550–870	3.8	6.2	7.6	9.9	11.8
870–1000	4.2	6.9	8.2	10.5	12.5

Output match and isolation

Listed models	Output RL minimum	Isolation minimum
2WV, 3WBV, 4WV, 6WV, 8WV	20 dB	22 dB

The summary uses the lowest QC minimum across the listed bands; limits are model- and band-specific. Nominal impedance: 75 Ω. Operating temperature: –40 to +60 °C.

Unequal three-way option

CX-SP-3WV-1G is the vertical unequal-output configuration. Specify the required branch arrangement and request its confirmed performance schedule with the quotation.

Port layout matters

A three-way balanced unit and a three-way unequal unit are different selections. Match the output losses to the branch plan, then verify port accessibility, mounting clearance and the exact housing code.

BROADBAND / BRANCHING A FEED

Directional coupler specifications

Choose a nominal tap value while retaining the main signal path. These couplers cover 5–1000 MHz at 75 Ω .

Nominal tap value	Complete orderable model
6 dB	CX-DC-1W-6dB
9 dB	CX-DC-1W-9dB
12 dB	CX-DC-1W-12dB
16 dB	CX-DC-1W-16dB

Main-path insertion loss, maximum dB

MHz	6 dB tap	9 dB tap	12 dB tap	16 dB tap
5–15	2.6	1.6	1.0	1.0
15–42	2.5	1.6	0.8	0.8
50–550	2.6	1.7	1.0	0.8
550–870	2.8	2.0	1.1	1.0
870–1000	3.2	2.2	1.5	1.3

Tap labels are nominal coupling values; the table gives the separate main-path insertion-loss limits. Coupling tolerance is a separate item in the agreed specification.

Minimum limits across the listed bands

Tap value	Input RL	Output RL	Isolation
6 dB	20 dB	18 dB	20 dB
9 dB	20 dB	18 dB	20 dB
12 dB	20 dB	18 dB	24 dB
16 dB	18 dB	18 dB	24 dB

Values are model-specific QC limits, not measured results for a shipment. RL = return loss. Operating temperature: –40 to +60 °C.

Follow the marked signal paths

Identify input, through and tap ports in the installation plan. Agree the power-pass or blocking requirement separately rather than assuming the satellite splitter's DC behavior applies to broadband couplers.

Practical product support. Personal service.

sales@componexx.com | componexx.com

Overview

HFC & COAXIAL / PAGE 5

02 / SATELLITE RF DISTRIBUTION

All-ports power-pass splitters

Two-way and three-way distribution for satellite layouts requiring RF paths and DC feed paths.

Model	Outputs	Frequency range
CX-202C	2-way	5–2500 MHz
CX-203C	3-way	5–2500 MHz

Distribute RF and pass DC

Both models use 75 Ω F-female interfaces and diode-steered DC power pass on all ports. Zinc die-cast housings with a tin-plated finish provide the mechanical construction.

Selection fact	Published specification
Operating temperature	–34 to +60 °C
Power pass	All ports; diode steered
Surge test reference	Category A3, 6 kV ring wave
Salt spray / UV references	ASTM B117 / ASTM G154; 500 hours each

Insertion loss limits

Frequency band	CX-202C	CX-203C
5–862 MHz	≤4.7 dB	≤7.7 dB
950–2150 MHz	≤5.2 dB	≤9.5 dB
2150–2500 MHz	≤5.4 dB	≤9.7 dB

Loss limits apply to the listed bands; values are not inferred for gaps between bands.

Match the power path

Review which ports must carry DC, the connected equipment and the installation layout. Do not select a satellite power-pass splitter solely by its output count or use its frequency rating as proof of suitability for another network.

[View CX-202C / CX-203C product overview](#)

03 / LEVEL CONTROL AND TERMINATION

Attenuators and connectors

Complete the coaxial connection with the required signal level and cable fit.

CPX-ATT Series

Mini Coaxial Fixed Attenuator



Compact inline attenuation for 75-ohm coaxial networks.

5–3000 MHz; F male to F female; DC pass.

Nominal values: 3, 6, 9, 12, 16, 18 and 20 dB.

Nickel-plated brass; 28 × 11 mm; 7/16 in hex.

Specify attenuation value and operating frequency range.

[View product overview](#)

CPX-RG6-CF

RG6 Compression F Connector



One-piece compression termination with a metallic body and weather-resistant sealing.

RG6 cable family; F-connector interface.

Overall length 29.3 mm; maximum outside diameter 11.2 mm.

Match cable construction and dimensions to the connector.

Select the compatible compression tool.

[View product overview](#)

Specify a repeatable supply item

Product	Include with your inquiry
Splitter / coupler	Frequency plan, port layout, tap value, power pass and housing orientation.
Fixed attenuator	Attenuation value, frequency range and DC requirement.
Compression connector	Cable dimensions and construction, tool and installation environment.

Build the program around your network

Share the application, drawings or reference part, evaluation requirements, quantities and schedule. ComponexX can review private-label marking and packaging alongside the technical specification.

Discuss your project | sales@componexx.com

Practical product support. Personal service.

sales@componexx.com | componexx.com

Overview

HFC & COAXIAL / PAGE 7

APPLICATION AND REPEAT SUPPLY

Build around the actual network

Define the RF function, the installation and the acceptance criteria together. Keep broadband and satellite selections clear within the same supply program.

Illustrative application	Component choice	What to confirm
Broadband branching	Equal or unequal splitter; directional coupler	Port-by-port level plan and operating-band performance.
Satellite distribution	CX-202C / CX-203C	RF path, diode-steered DC path and equipment control requirements.
Signal-level correction	CPX-ATT Series	Required attenuation, operating bands and DC pass.
Repeatable RG6 termination	CPX-RG6-CF	Cable jacket/dielectric dimensions, shielding and compression tool.

Qualification that can be repeated

Review area	Useful acceptance detail
RF performance	Insertion loss, return loss, isolation and response over the actual operating bands.
Network operation	Upstream/downstream operation with representative installed equipment and signal levels.
Mechanical installation	Port access, mounting, cable retention and environmental sealing.
Product identity	Exact model, port labels, attenuation/tap value and approved artwork.
Supply format	Individual or bulk packaging, identification, lot traceability and agreed quantities.

Make the product part of your offering

ComponexX-branded, private-label or unbranded configurations can be reviewed for recurring deployment or resale. Agree the model specification and marking before production so repeat orders describe the same product.

Send the network requirement

Share the frequency plan, drawings or reference parts, sample evaluation requirements, quantities and schedule.

Discuss your project | sales@componexx.com

Practical product support. Personal service.

sales@componexx.com | componexx.com

Overview

HFC & COAXIAL / PAGE 8